

SHORTER COMMUNICATIONS

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THE SEPTAL ANASTOMOSIS OF THE CORONARY ARTERIES

BY PROF. LAUBRY, Paris

No summary available

REPETITIVE PAROXYSMAL TACHYCARDIA

BY JOHN PARKINSON AND CORNELIO PAPP, London

The name "repetitive" is here applied to a special variety of paroxysmal tachycardia in which brief paroxysms separated by sinus beats constantly recur over months or years.

Forty new cases of repetitive paroxysmal tachycardia have been collected, half of them with prolonged observation periods up to 18 years. Ages from 4 to 75 years with two-thirds of the patients (including seven children) under 40 years of age; males predominate. Of the 40 cases, only 3 had organic heart disease; 2 gave a rheumatic history but had no heart disease; 3 had toxic goitre.

The usual symptom was palpitation, and four patients with ventricular paroxysms also had syncopal attacks. Fourteen patients, including seven children, were symptomless.

The only clinical sign was the peculiar irregular pulse.

Diagnosis was based on a particular kind of electrocardiogram recorded at numerous successive examinations. This almost always showed short paroxysms of tachycardia separated by normal sinus beats (paroxysmal tachycardia type), occasionally runs of multiform extrasystoles (extrasystolic type), more frequently both types together (mixed type).

The abnormal rhythm was divided as follows:

(a) Repetitive auricular paroxysmal tachycardia, 24 cases:—16 of the paroxysmal tachycardia type, 3 of the extrasystolic type, and 5 of the mixed type.

The average rate was 150 in children and 130 in adults.

(b) Repetitive auricular *flutter*, 5 cases, 3 with irregular auricular rhythm (impure flutter), one with probable fibrillation.

(c) Repetitive *nodal* paroxysmal tachycardia, 2 cases.

(d) Repetitive *ventricular* paroxysmal tachycardia, 9 cases:—7 of the paroxysmal tachycardia type with normal beats separating the runs, 2 of the mixed type.

Repetitive paroxysmal tachycardia provides a connecting link between extrasystoles and paroxysmal tachycardia. The extrasystolic runs are always irregular and so are the shorter runs of paroxysmal tachycardia, but the longer runs of the latter type are as regular as ordinary paroxysmal tachycardia though somewhat lower in average rate.

This paroxysmal state is uncertain in its duration, but it often subsides. In children it may cease at adolescence; in adults it may last for years and then disappear as it did in 8 of 14 cases long observed. The prognosis as regards disability and length of life is good both in the auricular and ventricular form, though there are exceptions. Digitalis is rarely effective; quinidine occasionally controls the ventricular form. Repetitive paroxysmal tachycardia may be regarded as a distinctive disorder of rhythm rather than a cardiac disease of consequence.

SYMPATHECTOMY FOR HYPERTENSION

BY GEOFFREY BOURNE, London

Dr. Bourne said that he proposed to limit his remarks to the pathology of the condition and to try, from the information that was available, to stimulate a discussion as to whether sympathectomy was valuable, and at what stage of the disease it should be done.

The approach to that question had hitherto been very largely empirical; various observers had stated that in females from twenty to thirty the results were good, from thirty to forty not so good, and after fifty on the whole rather bad, but he felt that an attempt to decide this in terms of the numerical

years of a patient's life was unscientific because a man was as old as his arteries, and many people's arteries were very much younger than their years. There had been no real, comprehensible pathological basis explaining why it was that hypertension occurred. The only satisfactory experimental work had been that of Goldblatt, and the theories of hypertension had, since then, been very largely founded upon the renin hypothesis.

Within the last few months there had, however, emerged further work which might have considerable implications, and that was the work of Trueta and his colleagues at Oxford. They had been able to produce an experimental ischæmia in rabbits by stimulation of the nervous system; this ischæmia was one of the cortex of the kidney, and could be produced in the absence of any organic disease. It was possible that human hypertension in its early stages might be due to a similar phenomenon. Trueta and his colleagues had also shown that the same cortical blanching might be produced by various other means, some of them biochemical, and their second point was that synchronously with this cortical blanching of the kidney there was in fact developed a secondary renal circulation which allowed the blood to be short-circuited back into the kidney without ever having passed the cortex. This had been proved by injection methods and by seeing arterial blood pulsating in the renal vein during the course of their experiments on animals. They had found that animals did not all react in the same way, and also had some evidence that although the stimulus was largely through the nervous system it might be brought about by large doses of posterior pituitary extract.

During the early 'teens the boy or girl liable to hypertension had a blood pressure that was easily raised by emotion, but as the years went by there was a more permanent increase in the systolic and diastolic figures, and round about the age of forty there was developed the clinical case of persistent hypertension. In the earlier stages there was a possibility of reducing the raised blood pressure temporarily to normal by the use of sedatives or by rest in bed or starvation, and many of the other means that had been employed hitherto in the treatment of hypertension, but after a variable time the factor of arterial degeneration was superimposed, so that in addition to spasm the hypertension was partially due to organic vascular renal disease. Cortical spasm alone might well be the actual cause of hypertension in the younger, and a mixture of spasm and permanent renal disease in the older group.

He described one similar to many hundreds seen by others, of a man of 37 years of age who, at 15

and at 17, had been examined and found to have high blood pressure; and at 22 they had the first recorded figures, 240/160: at the age of 32 it was 180/140 and at 37, 194/124, so that for over twenty years he had had considerable hypertension without any shortage of breath, or headaches, or any symptoms whatever. He thought he might make quite legitimate deductions from such cases: the first was that long-sustained increased pressure as such had no effect deleteriously on either the arteries or on the heart, hypertrophy only being caused. During this first stage of hypertension there was available post-mortem evidence from young subjects, whose arteries had been examined, no sign whatever of any degeneration being apparent, such cases having been knocked down in the street or having died of something else.

In the second stage one began to get arterial degeneration, and it seemed clear that this degeneration was really the first and primary cause of the so-called hypertensive lesions in heart, kidney, or retina. Such degeneration in most cases was a manifestation of age, or wear and tear, but in a few young subjects the arterial tissue was affected by the presence of chronic nephritis.

When it came to consideration of the effects of sympathectomy cases seemed to be divided into two kinds: in one case the operation succeeded, and in another it clearly failed—there being a temporary fall in the blood pressure which within three months or so had risen again.

It was clear they did not want to use sympathectomy too early, because such a patient might easily live without symptoms for twenty years with hypertension. The actual follow-up of all cases of sympathectomy did not extend farther back than something like eight years. If sympathectomy were done at this early stage it would be less easily applicable later when its help might be needed by the patient because of the onset of advancing arterial disease. If a second sympathectomy were then done it certainly would be much more difficult technically. Sympathectomy was equally contraindicated when dealing with cases that had severe or advanced vascular disease, particularly of the kidneys. It would therefore seem to be their duty to try to find some way of judging when a patient was approaching the end of his period of benign hypertension, and not to leave it too late before they decided that sympathectomy should be done. There were, of course, exceptions to the rule, such as those cases of malignant hypertension, particularly in young subjects with advanced retinitis who could barely see, but after operation could read. The charts and retinal pictures of two such cases were shown, who during the post-operative five and six months

had improved greatly, both as regards vision and as regards general health.

The family history was also helpful: there were those individuals who had in the family a number of relations who had had raised blood pressure for many years without symptoms, and on the contrary there were families, many of whom seemed to die at the age of about forty-five. Probably the safest guide was a regular periodic and careful examination of the patient, so that one might soon become aware early of any fresh change that had started to occur. A watch should be kept for a sudden increase in the already high blood pressure and close observa-

tion of the retina should be made periodically by the same ophthalmic surgeon. Then again, obvious deterioration in the cardiac function, as shown by increasing size of the heart and increasing shortness of breath would immediately lead one to consider most carefully whether sympathectomy should or should not be done. In such cases angina and coronary disease were a contraindication to sympathectomy. The renal function should be similarly reassessed at intervals. Evidence of definite impairment of this was also a contraindication to the operation.

BY SVEN HAMMARSTRÖM, St. Erik's Hospital, Stockholm

The neurosurgical treatment of hypertension was introduced in Sweden in 1940 by Olivecrona and Berglund. I have followed up 100 of their patients one to seven years after sympathectomy (*Acta med. Scand.*, 1947, Suppl. 192). Most of the patients were submitted to dorso-lumbar sympathectomy according to Smithwick and a smaller group to supradiaphragmatic sympathectomy according to Peet. The results of the last mentioned one-stage operation on the whole agree with those obtained with the more complicated and extensive method. I recommend Peets' operation in selected cases of less severe hypertensive disease.

About one half of the patients in our series before operation had a severe hypertensive disease with retinal exudates and hæmorrhages. The operative mortality was 2 per cent and the late mortality 20 per cent.

Even under so-called basal conditions there is a great variability of blood pressure in all groups of hypertensive patients, which must be considered in the evaluation of the effect of sympathectomy. I have studied the blood pressure before and at various lengths of time after sympathectomy by means of 24-hour readings, which made possible a statistical evaluation of the significance of the post-operative change. In 60 per cent of the patients still alive there is a significant drop in systolic and diastolic pressure during the whole follow-up time. This lowering was regularly followed by an improvement or complete disappearance of hypertensive retinopathy and improvement or return to normal of the electrocardiogram.

In 50 patients the average post-operative drop in systolic and diastolic pressure was essentially the same according to 24-hour readings registered shortly after the operation and after an average time of three years. Furthermore the average drop in blood pressure was the same in those examined

shorter and longer time than three years after sympathectomy.

Contrary to the long-standing lowering of blood pressure in the recumbent position, the post-operative orthostatic hypotension and tachycardia is transient. Repeated tilting tests after sympathectomy showed that the orthostatic changes gradually subsided and usually disappeared within one year after sympathectomy. There is furthermore no correlation between the amount of the pressure lowering in the recumbent position and the degree of the orthostatic changes.

There is still no reliable test to predict the effect of sympathectomy. I found no correlation between the postoperative change in blood pressure and its height, or spontaneous or induced variability before operation. The main indication for sympathectomy is a progressive hypertensive disease with retinopathy, left ventricular strain, and cerebral symptoms, in the absence of the signs of severe organic vascular damage, which will be described below. We do not usually operate on patients with uncomplicated hypertension who show no other objective signs than elevated pressure or in addition left axis deviation in the cardiogram and/or slight vascular eye-ground changes. These patients, who constitute the great majority, often have a transient hypertension and only a slight excess mortality compared with the average population (Bechgaard (1946), *Acta med. Scand.*, Suppl. 172). The occurrence and degree of subjective symptoms in hypertensive disease does not run parallel with the objective signs. Even in benign hypertension the subjective symptoms may be incapacitating. In most of these patients medical and psychotherapeutical measures give adequate relief. In those who are unimproved by such prolonged treatment sympathectomy is advisable on account of its striking effect on headache and other subjective symptoms with restitution of the working capacity.

An analysis of the failures of sympathectomy in our series showed that the following signs contraindicated neurosurgical treatment. Impaired renal function shown by more than one of the following signs: albuminuria, non-protein nitrogen above 45 mg. per 100 ml., creatinine clearance below 80 ml./minute, cardiac decompensation where less

than ordinary activity causes discomfort, and enlargement of the heart volume above 500 ml/m² body surface. Valvular lesions and coarctation of the aorta must also be excluded. Cerebral lesions with persistent symptoms such as hemiplegia or even advanced hypertensive encephalopathy contraindicate sympathectomy.

TOMOGRAPHY IN THE STUDY OF THE CARDIOVASCULAR SYSTEM

BY E. TISCENCO AND J. H. WRIGHT, Glasgow

An attempt was made to illustrate the application of tomography of the cardiovascular system by lantern slide demonstration. In the absence of the apparatus for tomographic screening, a procedure was suggested by which the accuracy of the tomographic positioning, particularly for oblique projections, can be enhanced.

The pulmonary vascular structures in health and in emphysema were demonstrated.

The various parts of the normal aorta were shown followed by the appearances of the aorta in atheroma and in aneurysms.

The normal left atrium was displayed by a tomographic section and compared with the appearances in varying degrees of its enlargement. When straight examinations are inconclusive tomography may be of diagnostic value.

The outflow and inflow tracts of the right ventricle were tomographically defined. Examples of eccentric and concentric hypertrophy of the left ventricle in hypertension were given.

A structure seen in several tomographs, substantiated by anatomical comparison as well as by demonstration of the lobus venæ azygos, was shown to be consistent with the major azygos vein.

The last section of the demonstration was confined to the differentiation of pathological shadows projected close to or into the cardiovascular structures.

Although the study was not conclusive, it was hoped that improvement in the mechanical side of tomography would not only enhance its accuracy but fully justify its application in the study of cardiovascular radiology.